UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,448	12/09/2004	Klaus Ingemann Pedersen	60282.00227	8648

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EXAMINER
NICKERSON, JEFFREY L

ART UNIT	PAPER NUMBER
2442	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/517,448	PEDERSEN ET AL.
	Examiner	Art Unit	
	JEFFREY NICKERSON	2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>11 August 2008</u>.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>73-104</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>73,79-83,89-93,97 and 101</u> is/are rejected.
7)☒ Claim(s) <u>74-78, 84-88, 94-96, 98-100, 102-104</u> is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   This communication is in response to Application No. 10/517,448 filed nationally

on 09 December 2004 and internationally on 13 June 2002. The amendment presented

on 08 August 2008 and 11 August 2008, which cancels claims 20-72, and adds claims

73-104, is hereby acknowledged. Claims 73-104 have been examined.

Claim Objections

2.   The amendment presented on 08 August 2008 cancelling claims 20-72 is noted.

All prior objections to the claims are therefore obviated and hereby withdrawn. New

objections may appear below.

3.   Claims 73, 83, 85, and 90 are objected to because of minor grammatical or

spelling errors. Appropriate correction is required.

Regarding claim 73, the word "comprising" is misspelled in limitation 6.

Regarding claim 83, the phrase "the measurement" is misspelled in the last limitation.

Regarding claim 85, it appears this claims should depend on claim 84, and not 83,

based on the content of the claim. For purposes of further examination this claim will be

treated as dependent on claim 84.

Regarding claim 90, it appears this claim should depend on claim 89, and not 83, based on the content of the claim. For purposes of further examination this claim will be treated as dependent on claim 89.

Claim Rejections - 35 USC § 112

4.   The amendment presented on 08 August 2008 cancelling claims 20-72 is noted. All prior rejections under 35 USC 112 are therefore obviated and hereby withdrawn.

Response to Arguments

5.   Applicant's arguments filed 08 August 2008 and 11 August 2008 have been fully considered but they are both not persuasive, in part, and persuasive, in part.

Independent claims 73, 83, 93, and 101

Applicant argues several limitations are not taught by the combined teachings of Gopalakrishnan (US 2002/0110101), Tseng ("Code Placement..."), and Chheda (US 2003/0231586). Specifically applicant argues the combined teachings do not teach measuring average transmitted power of a shared downlink channel.

The examiner respectfully disagrees. Applicant never defines what an "average transmitted power" is or how it is measured. Specifically, applicant does not disclose how an average is calculated or what the average is in regards to (average across past x time, instantaneous average across users, etc). In fact, throughout applicant's

specification the "average transmitted power" is denoted as an estimated transmit

power on the downlink shared channel. See, for instance, claims 74 and 76. Chheda

teaches estimating the transmit power on the downlink channel (Chheda: Figure 4;

abstract).

Applicant argues that the combined teachings do not teach measuring a relative activity

factor as defined in the newly added claims. Applicant further argues that the combined

teachings do not teach measuring a weighted code blocking rate as defined in the newly

added claims.

These arguments are persuasive.

Applicant argues that it would not be obvious to combine the teachings of

Gopalakrishnan, Tseng, and Chheda.

The examiner respectfully disagrees. All three references are directed towards

managing CDMA communication resources and would be obvious to combine.

Applicant further argues it would not be obvious to combine Weinberg (US 5,138,311).

The examiner respectfully disagrees. Weinberg uses a well-known method for

obtaining open-loop feedback for management of a communication channel.

Specifically, Weinberg uses an observation period of the communication channel and identifies metrics during the relative observation period times. Therefore, Weinberg is directed to management of (or optimizing) communication channel resources and, accordingly, is in a similar field of endeavor. Therefore it would be obvious to combine Weinberg because the reference directed to solving the same type of problem, management of communication channel resources (Weinberg: abstract).

For reasons stated above the examiner believes the rejections of prior claims (though now cancelled) were proper. New claim rejections for newly added claims may appear below.

Dependent claims 74-82, 84-92, 94-96, 98-100, and 102-104

Applicant argues these claims conditionally on the arguments for their parent independent claims.

For reasons stated above the examiner believes the rejections of prior claims (though now cancelled) were proper. New claim rejections for newly added claims may appear below.

Claim Rejections - 35 USC § 103

6.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7.   Claims 73, 79, 82-83, 89, 92-93, and 101 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Gopalakrishnan (US 2002/0110101 A1), and in further view of

Chheda (US 2003/0231586 A1), Weinberg (US 5,138,311), and Minn et al ("Dynamic

Assignment of Orthogonal Variable-Spreading-Factor Codes in W-CDMA", August

2000).

Regarding claim 73, Gopalakrishnan teaches a method, comprising:

        adaptive setting reservation of channelization codes or allowed power for a

downlink shared channel, DSCH, based on parameters for a minimum allowed

spreading factor or an allowed power level (Gopalakrishnan: abstract; [0041]);

        setting the parameters depending on traffic load, a total load of a cell, and

availability of channelization codes (Gopalakrishnan: [0016]-[0019]; [0063]-[0071]);

        measuring various channel metrics (Gopalakrishnan: Figure 8; [0060]-[0061]);

        adaptively adjusting at least one of a root spreading factor for the downlink

shared channel based on results of the measuring (Gopalakrishnan: [0041]); and

        wherein a channel is a physical downlink shared channel (Gopalakrishnan:

[0041]).

        Gopalakrishnan does not teach adaptively adjusting allowed power; and

        wherein measuring various channel metrics comprises:

        measuring an average transmitted power of a channel;

measuring a relative activity factor of a channel, the relative activity factor

defining the ratio between silence and activity of the channel during an observation

period; and

measuring weighted code blocking rate, the weighted code blocking rate defining

a relative time during an observation period in which a larger bit rate than an actually

allocated bit rate could have been allocated to a user equipment according to a link

adaptation criteria for controlling the channel

Chheda, in a similar field of endeavor, teaches adaptively adjusting allowed

power (Chheda: abstract); and

wherein measuring various channel metrics comprises:

measuring an average transmitted power of a channel (Chheda: abstract).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the teachings of Chheda for measuring power usage. The

teachings of Chheda, when implemented in the Gopalakrishnan system, will allow one

of ordinary skill in the art to consider power usage in a resource allocation scheme.

One of ordinary skill in the art would be motivated to utilize the teachings of Chheda in

the Gopalakrishnan system in order to increase the efficiency of future resource

allocation.

The Gopalakrishnan/Chheda system does not teach wherein measuring various

channel metrics comprises:

measuring a relative activity factor of a channel, the relative activity factor

defining the ratio between silence and activity of the channel during an observation

period; and

measuring weighted code blocking rate, the weighted code blocking rate defining

a relative time during an observation period in which a larger bit rate than an actually

allocated bit rate could have been allocated to a user equipment according to a link

adaptation criteria for controlling the channel.

Weinberg, in a similar field of endeavor, teaches wherein measuring various

channel metrics comprises:

identifying relative times of metrics of a channel during an observation period

(Weinberg: Figures 4A and 4B; abstract; col 8, lines 1-30; col 2, line 54 – col 3, line 3);

and

wherein a metric is the ratio of silence and activity (Weinberg: Figures 4A and

4B).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the teachings of Weinberg for measuring channel metrics

during an observation period. The teachings of Weinberg, when implemented in the

Gopalakrishnan/Chheda system, will allow one of ordinary skill in the art to measure

channel resource use such as power and code usage based on observation periods.

One of ordinary skill in the art would be motivated to utilize the teachings of Weinberg in

the Gopalakrishnan/Chheda system in order to utilize an open-loop feedback system to

aid in practicing the system.

The Gopalakrishnan/Chheda/Weinberg system does not teach wherein a metric is when a larger bit rate than an actually allocated bit rate could have been allocated to a user equipment according to a link adaptation criteria.

Minn, in a similar field of endeavor, teaches wherein a metric is when a larger bit rate than an actually allocated bit rate could have been allocated to a user equipment according to link adaptation criteria (Minn: sections II and III).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Minn for using DCA and identifying if codes are blocking or not. The teachings of Minn, when implemented in the Gopalakrishnan/Chheda/Weinberg system, will allow one of ordinary skill in the art to dynamically adjust various channel resources, such as code allocation, based on measured metrics, such as identifying code blocking and non-blocking. One of ordinary skill in the art would be motivated to utilize the teachings of Minn in the Gopalakrishnan/Chheda/Weinberg system in order to optimize system resources.

Regarding claim 79, the Gopalakrishnan/Chheda/Weinberg/Minn system teaches further comprising:

allocating one of said channelization codes (Minn: abstract);

reserving a new root code comprising a given spreading factor (Minn: section II);

deciding where in a code tree this reserving is to be made (Minn: section II and III; These 3 steps are also inherent to any CDMA system when allocating a new code for a new user).

Regarding claim 82, the Gopalakrishnan/Chheda/Weinberg/Minn system teaches measuring the total load of the cell by power (Gopalakrishnan: [0065]; Chheda: abstract).

Regarding claim 83, this apparatus claim contains limitations corresponding to that of claim 73 and the same rationale of rejection is used, where applicable.

Regarding claim 89, this apparatus claim contains limitations corresponding to that of claim 77 and the same rationale of rejection is used, where applicable.

Regarding claim 92, this apparatus claim contains limitations corresponding to that of claim 82 and the same rationale of rejection is used, where applicable.

Regarding claim 93, this apparatus claim contains limitations corresponding to that of claim 73 and the same rationale of rejection is used, where applicable.

Regarding claim 101, this apparatus claim contains limitations corresponding to that of claim 73 and the same rationale of rejection is used, where applicable.

8.   Claims 80-81 and 90-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalakrishnan (US 2002/0110101 A1), in view of Chheda (US

2003/0231586 A1), Weinberg (US 5,138,311), Minn et al ("Dynamic Assignment of

Orthogonal Variable-Spreading-Factor Codes in W-CDMA", August 2000), and in further

view of Cao et al (US 2002/0089952 A1).

Regarding claim 80, the Gopalakrishnan/Chheda/Weinberg/Minn system teaches

assigning codes for downlink and for users in the code tree (Minn: section II).

The Gopalakrishnan/Chheda/Weinberg/Minn system does not teach assigning

codes for downlink to a first limb of the code tree and assigning codes for users

substantially in another limb of the code tree.

Cao, in a similar field of endeavor, teaches assigning codes for downlink to a first

limb of the code tree and assigning codes for users substantially in another limb of the

code tree (Cao: [0085]-[0089]).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the teachings of Cao for allocating areas of the code tree

for particular uses. The teachings of Cao, when implemented in the

Gopalakrishnan/Chheda/Weinberg/Minn system, will allow one of ordinary skill in the art

to optimize resource use for channels by allocating codes based on logical usage. One

of ordinary skill in the art would be motivated to utilize the teachings of Cao in the

Gopalakrishnan/Chheda/Weinberg/Minn system in order to make allocating codes

easier and fairer.

Regarding claim 81, the Gopalakrishnan/Chheda/Weinberg/Minn/Cao system teaches further comprising:

allocating a default capacity to a territory when allowed by a total load of the code tree (Cao: [0088]); and

increasing a spreading factor when the code tree is highly loaded (Chheda: abstract).

Regarding claim 90, this apparatus claim contains limitations corresponding to that of claim 80 and the same rationale of rejection is used, where applicable.

Regarding claim 91, this apparatus claim contains limitations corresponding to that of claim 81 and the same rationale of rejection is used, where applicable.

9.   Claim 97 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chheda (US 2003/0231586 A1), and in further view of Weinberg (US 5,138,311) and Minn et al ("Dynamic Assignment of Orthogonal Variable-Spreading-Factor Codes in W-CDMA", August 2000).

Regarding claim 97, Chheda teaches an apparatus configured to measure:

average transmitted power of a physical downlink shared channel (Chheda: abstract);

various channel metrics (Chheda: abstract).

Chheda does not teach wherein measuring various channel metrics comprises:

measuring a relative activity factor of a channel, the relative activity factor

defining the ratio between silence and activity of the channel during an observation

period; and

measuring weighted code blocking rate, the weighted code blocking rate defining

a relative time during an observation period in which a larger bit rate than an actually

allocated bit rate could have been allocated to a user equipment according to a link

adaptation criteria for controlling the channel.

Weinberg, in a similar field of endeavor, teaches wherein measuring various

channel metrics comprises:

identifying relative times of metrics of a channel during an observation period

(Weinberg: Figures 4A and 4B; abstract; col 8, lines 1-30; col 2, line 54 – col 3, line 3);

and

wherein a metric is the ratio of silence and activity (Weinberg: Figures 4A and

4B).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the teachings of Weinberg for measuring channel metrics

during an observation period. The teachings of Weinberg, when implemented in the

Chheda system, will allow one of ordinary skill in the art to measure channel resource

use such as power and code usage based on observation periods. One of ordinary skill

in the art would be motivated to utilize the teachings of Weinberg in the Chheda system

in order to utilize an open-loop feedback system to aid in practicing the system.

The Chheda/Weinberg system does not teach wherein a metric is when a larger bit rate than an actually allocated bit rate could have been allocated to a user equipment according to a link adaptation criteria.

Minn, in a similar field of endeavor, teaches wherein a metric is when a larger bit rate than an actually allocated bit rate could have been allocated to a user equipment according to link adaptation criteria (Minn: sections II and III).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Minn for using DCA and identifying if codes are blocking or not. The teachings of Minn, when implemented in the Chheda/Weinberg system, will allow one of ordinary skill in the art to dynamically adjust various channel resources, such as code allocation, based on measured metrics, such as identifying code blocking and non-blocking. One of ordinary skill in the art would be motivated to utilize the teachings of Minn in the Chheda/Weinberg system in order to optimize system resources.

Allowable Subject Matter

10.   Claims 74-78, 84-88, 94-96, 98-100, and 102-104 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Cited Pertinent Prior Art

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

    a.   Chen et al ("A Novel Code Assignment Scheme for W-CDMA Systems",

2001) discloses dynamic CDMA assignment.

    b.   Rahman (US 6,078,817) discloses adaptively increasing/decreasing

spreading factors based on capacity load and demand.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY NICKERSON whose telephone number is (571)270-3631. The examiner can normally be reached on M-Th, 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. N./
Jeffrey Nickerson
Examiner, Art Unit 2442

/Andrew Caldwell/
Supervisory Patent Examiner, Art Unit 2442